

**EAST ORANGE SCHOOL DISTRICT
2017/18 MIDDLE SCHOOLS (6-8) SCIENCE
SEQUENCING MATRIX**

GRADE 6				
UNITS	UNIT TOPIC	CONTENT	INST DAYS	CYCLE
UNIT 1	<p><i>Rituals, Routines, Lab Safety, Scientific Method, Engineering Design Method, 5E Instructional Model</i></p> <p>Structure and Function</p> <p>Chapter 1: Classifying & Exploring Life</p> <ul style="list-style-type: none"> • <i>Characteristics of Life</i> <p>Chapter 2: Cell</p> <ul style="list-style-type: none"> • <i>Cells and Life</i> • <i>The Cell</i> • <i>Moving Cellular Material</i> • <i>Cells and Energy</i> <p>Chapter 3: From a Cell to Organism</p> <ul style="list-style-type: none"> • <i>Levels of Organization</i> <p>Chapter 12: Animal Structure and Function</p> <ul style="list-style-type: none"> • <i>Support, Control & Movement</i> • <i>Circulation & Gas Exchange</i> • <i>Digestion & Excretion</i> 	LIFE SCIENCE	45	1
UNIT 2	<p>Microorganisms, Fungi, and Plants (Energy Flow, Growth & Development)</p> <p>Chapter 7: Bacteria</p> <ul style="list-style-type: none"> • <i>What are bacteria?</i> • <i>Bacteria in Nature</i> • <i>What are viruses?</i> <p>Chapter 8: Protists & Fungi</p> <ul style="list-style-type: none"> • <i>What are protists?</i> • <i>What are fungi?</i> <p>Chapter 10: Plant Processes & Reproduction</p> <ul style="list-style-type: none"> • <i>Energy Processing in Plants</i> • <i>Plant Responses</i> • <i>Plant Reproduction</i> 	LIFE SCIENCE	45	2
UNIT 3	<p>Growth, Development, and Reproduction</p> <p>Chapter 9: Plant Diversity</p> <ul style="list-style-type: none"> • <i>What is a plant?</i> • <i>Seedless Plants</i> • <i>Seed Plants</i> <p>Chapter 11: Animal Diversity</p> <ul style="list-style-type: none"> • <i>What defines an animal?</i> • <i>Invertebrate Phyla</i> • <i>Phylum Chordata</i> <p>Chapter 13: Animal Behavior & Reproduction</p> <ul style="list-style-type: none"> • <i>Types of Behavior</i> 	LIFE SCIENCE	45	3

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UNITS	UNIT TOPIC	CONTENT	INST DAYS	CYCLE
	<ul style="list-style-type: none"> • <i>Interacting with Others</i> • <i>Animal Reproduction and Development</i> 			
UNIT 4	Waves, Electricity & Magnetism Chapter 15: Waves <ul style="list-style-type: none"> • <i>What are Waves</i> • <i>Wave Properties</i> • <i>Wave Interactions</i> Chapter 16: Sound <ul style="list-style-type: none"> • <i>Section 1: Producing & Detecting Sound</i> Chapter 17: Electromagnetic Waves <ul style="list-style-type: none"> • <i>Section 2 Electromagnetic Spectrum</i> Chapter 19: Electricity <ul style="list-style-type: none"> • <i>Electric Charge & Electric Forces</i> • <i>Describing Circuits</i> Chapter 20: Magnetism <ul style="list-style-type: none"> • <i>Magnets & Magnetic Forces</i> • <i>Making an Electric Current with Magnet</i> 	PHYSICAL SCIENCE	45	4
UNIT 5	Body Systems (Accelerated Learners) Chapter 14: Structure and Movement <ul style="list-style-type: none"> • <i>The Skeletal System</i> • <i>The Muscular System</i> Chapter 15: Digestion & Excretion <ul style="list-style-type: none"> • <i>The Digestive System</i> • <i>The Excretory System</i> Chapter 16: Respiration and Circulation <ul style="list-style-type: none"> • <i>The Respiratory System</i> • <i>The Circulatory System</i> Chapter 18: Control and Coordination <ul style="list-style-type: none"> • <i>The Nervous System</i> 	LIFE SCIENCE		
			180	

(NOTE: Instructional days are based on McGraw Hill pacing guide of the individual lessons included in each unit)

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GRADE 7				
UNITS	UNIT TOPIC	CONTENT	INST DAYS	CYCLE
UNIT 1	<i>Rituals, Routines, Lab Safety, Scientific Method, Engineering Design Method, 5E Instructional Model</i> Weather and Climate Chapter 12: Earth's Atmosphere <ul style="list-style-type: none"> • <i>Describing Earth's Atmosphere</i> • <i>Energy Transfer in the Atmosphere</i> • <i>Air Currents</i> Chapter 13: Weather <ul style="list-style-type: none"> • <i>Describing Weather</i> • <i>Weather Patterns</i> • <i>Weather Forecasts</i> Chapter 14: Climate <ul style="list-style-type: none"> • <i>Climates of the Earth</i> • <i>Climate Cycles</i> • <i>Recent Climate Changes</i> 	EARTH SCIENCE	30	1
UNIT 2	Heredity, Natural Selection & Adaptation & Evolution Chapter 4: Reproduction of Organism <ul style="list-style-type: none"> • <i>Sexual Reproduction & Meiosis</i> • <i>Asexual Reproduction</i> Chapter 5: Genetics <ul style="list-style-type: none"> • <i>Mendel and His Peas</i> • <i>Understanding Inheritance</i> • <i>DNA & Genetics</i> Chapter 6: The Environment & Change <ul style="list-style-type: none"> • <i>Fossil Evidence of Evolution</i> • <i>Theory of Evolution By Natural Selection</i> • <i>Biological Evidence of Evolution</i> <i>***Accelerated Learners***</i> Chapter 10: Clues to the Earth's Past Chapter 11: Geologic Time	LIFE SCIENCE	30	1&2
UNIT 3	Matter, Energy & Relationships in Organisms and Ecosystems Chapter 20: Matter and Energy in the Environment <ul style="list-style-type: none"> • <i>Abiotic Factors</i> • <i>Cycles of Matter</i> • <i>Energy in Ecosystems</i> Chapter 21: Population and Communities <ul style="list-style-type: none"> • <i>Populations</i> 	LIFE SCIENCE	30	2

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GRADE 7				
UNITS	UNIT TOPIC	CONTENT	INST DAYS	CYCLE
	<ul style="list-style-type: none"> • <i>Changing Populations</i> • <i>Communities</i> Chapter 22: Biomes and Ecosystems <ul style="list-style-type: none"> • <i>Land Biomes</i> • <i>Aquatic Ecosystems</i> • <i>How Ecosystems Change</i> 			
UNIT 4	Structure and Properties of Matter Chapter 7: Foundations of Chemistry <ul style="list-style-type: none"> • <i>Classifying Matter</i> • <i>Physical Properties</i> Chapter 8: States of Matter <ul style="list-style-type: none"> • <i>Solids, Liquids & Gases</i> • <i>Changes in State</i> • <i>The Behavior of Gases</i> Chapter 9: Understanding Atoms <ul style="list-style-type: none"> • <i>Discovering Parts of an Atom</i> • <i>Protons, Neutrons & Electrons</i> Chapter 10: The Periodic Table <ul style="list-style-type: none"> • <i>Using the Periodic Table</i> 	PHYSICAL SCI	45	3
UNIT 5	Chemical Reactions Chapter 11: Elements & Chemical Bonds <ul style="list-style-type: none"> • <i>Electrons & Energy Level</i> • <i>Ionic & Metallic Bonds</i> • <i>Compounds, Chemical Formulas & Covalent Bonds</i> Chapter 12: Chemical Reactions <ul style="list-style-type: none"> • <i>Understanding Chemical Reactions</i> • <i>Types of Chemical Reaction</i> • <i>Energy Changes and Chemical Reactions</i> Chapter 13: Mixtures, Solubility, & Acid/ Base Solutions <ul style="list-style-type: none"> • <i>Substances and Mixtures</i> • <i>Properties of Solutions (Accelerated Learners: Earth Science, Chapter 15, Lesson 2: Properties of Water)</i> • <i>Acids and Bases</i> 	PHYSICAL SCIENCE	45	4
			180	

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GRADE 8				
UNITS	UNIT TOPIC	CONTENT	INST DAYS	CYCLE
UNIT 1	<i>Rituals, Routines, Lab Safety, Scientific Method, Engineering Design Method, 5E Instructional Model</i> Forces and Motion Chapter 1: Describing Motion <ul style="list-style-type: none"> • <i>Position and Motion</i> • <i>Speed and Velocity</i> • <i>Acceleration</i> Chapter 2: The Laws of Motion <ul style="list-style-type: none"> • <i>Gravity & Friction</i> • <i>Newton's First Law</i> • <i>Newton's Second Law</i> • <i>Newton's Third Law</i> Chapter 4: Forces and Fluids <ul style="list-style-type: none"> • <i>Pressure & Density of Fluids</i> • <i>Buoyant Force</i> • <i>Other Effects of Fluid Forces</i> 	PHYSICAL SCIENCE	45	1
UNIT 2	Dynamic Earth Systems Chapter 4: Rocks <ul style="list-style-type: none"> • <i>Rocks and the Rock Cycle</i> Chapter 5: Weathering and Soil <ul style="list-style-type: none"> • <i>Weathering</i> • <i>Soil</i> Chapter 6: Erosion and Deposition <ul style="list-style-type: none"> • <i>Erosion and Deposition Process</i> • <i>Landforms Shaped by Water & Wind</i> • <i>Mass Wasting & Glaciers</i> Chapter 7: Plate Tectonics <ul style="list-style-type: none"> • <i>Continental Drift Hypothesis</i> • <i>Development Of a Theory</i> • <i>The Theory of Plate Tectonics (Accelerated Learners, Chapter 8, Lesson 2: Landforms at Plate Boundaries)</i> Chapter 8: Earth Dynamics <ul style="list-style-type: none"> • <i>Forces that Shape Earth</i> • <i>Mountain Building</i> 	EARTH SCIENCE	45	2
UNIT 3	Forms of Energy Chapter 6: Thermal Energy <ul style="list-style-type: none"> • <i>Thermal Energy, Temperature & Heat</i> • <i>Thermal Energy Transfers</i> • <i>Using Thermal Energy</i> Chapter 5: Energy & Energy Resources	PHYSICAL SCIENCE	30	3

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GRADE 8				
UNITS	UNIT TOPIC	CONTENT	INST DAYS	CYCLE
	<ul style="list-style-type: none"> • <i>Forms of Energy</i> • <i>Energy Transformations</i> Chapter 18: Natural Resources (Earth Science) <ul style="list-style-type: none"> • <i>Energy Resources</i> • <i>Renewable Energy Resources</i> • <i>Land Resources</i> • <i>Air & Water Resources</i> 			
UNIT 4	Human Impacts (Stability and Change on Earth) Chapter 15: Earth's Water <ul style="list-style-type: none"> • <i>The Water Planet</i> • <i>Water Quality</i> Chapter 16: Oceans <ul style="list-style-type: none"> • <i>Environmental Impacts on Oceans</i> Chapter 17: Freshwater <ul style="list-style-type: none"> • <i>Glaciers and Polar Ice Sheets</i> • <i>Groundwater and Wetlands</i> Chapter 9: Earthquakes & Volcanoes <ul style="list-style-type: none"> • <i>Earthquakes</i> 	EARTH SCIENCE	30	3 & 4
UNIT 5	Astronomy Chapter 20: The Sun-Earth-Moon System <ul style="list-style-type: none"> • <i>Earth's Motion</i> • <i>Earth's Moon</i> • <i>Eclipses and Tides</i> Chapter 21: The Solar System <ul style="list-style-type: none"> • <i>The Structure of the Solar System</i> • <i>Inner Planets</i> • <i>Outer Planets</i> Chapter 22: Stars and Galaxies <ul style="list-style-type: none"> • <i>View from the Earth</i> • <i>The Sun & Other Stars</i> • <i>Evolution of the Stars</i> • <i>Galaxies & the Universe</i> 	EARTH SCIENCE	30	4
			180	

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